Meeting Date: 5/29/07

AGENDA REPORT

City of Santa Clara, California

Agenda Item # 5A-2

Santa Clara All-America City 2001

DATE: May 23, 2007

TO: City Manager for Council Information
Executive Director for Redevelopment Agency Information

FROM: Junona A. Jonas, Director of Electric Utility

SUBJECT: Relocation of Tasman Substation

Tasman Substation (Tasman) is a large three bank distribution substation constructed in three phases between 1976 and 1986. Tasman was built to serve new development in the Tasman/Great America area and is currently operating at 90% of its normal design capacity. The substation serves 10% to 15% of the City's load including customers such as the Convention Center, Marvell Semiconductor, Great America and Nortel Networks.

SVP has a five year plan for upgrading and rebuilding the City's older substations. This plan has prioritized substation rebuilds based on age and condition of equipment in order to ensure reliable service to our customers. Although Tasman is an aging facility and will eventually require upgrade in control and protective systems and replacement of major equipment, this work is not currently contemplated in the Five Year Capital Plan.

The proposed 49er Stadium would require the relocation or reconfiguration of Tasman. Staff has considered a number of alternatives for this reconfiguration, all of which essentially require the reconstruction of Tasman. Staff estimates the cost of constructing a new substation and relocating the distribution feeders serving load in the area will be approximately $20 M. This cost does not include economies that may result in refining the project in conjunction with the proposed Palm and Mission Substation Projects, or possible premiums due to the construction industry climate. Such variations in cost are believed to be within plus or minus 15% of the estimate.

The relocation of Tasman will require over two years for design, procurement of long lead time equipment, construction of new facilities, the transfer of load and the demolition of existing facilities. If a two year construction period is assumed for the new stadium, work on the relocation of Tasman would have to begin in January 2008.

Staff will make a presentation to the Council summarizing its review of the relocation of Tasman Substation.

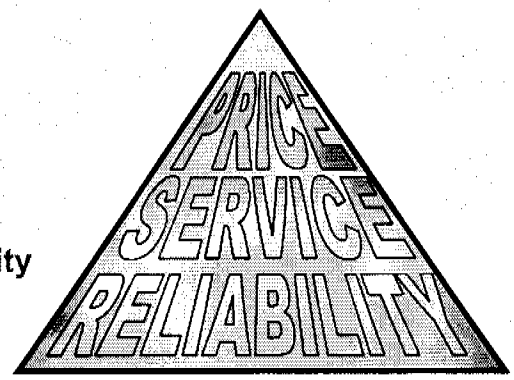
Junona A. Jonas
Director of Electric Utility

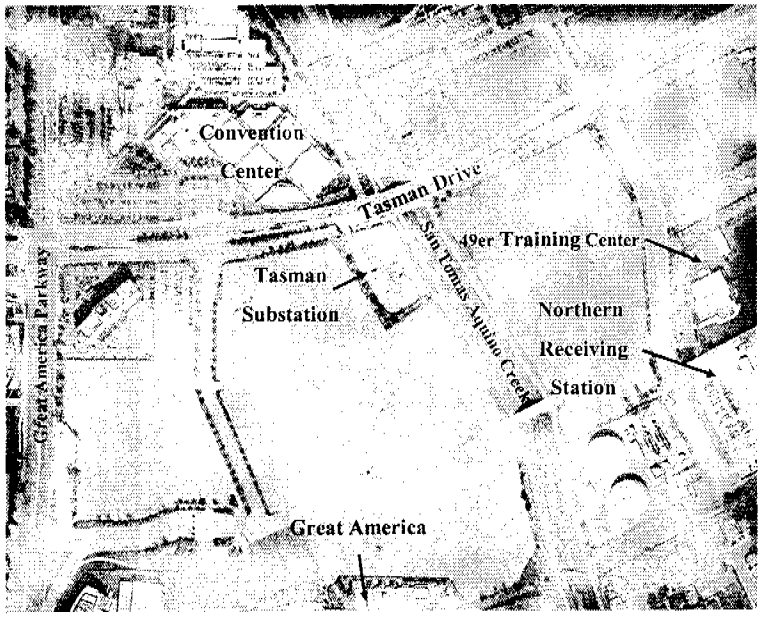
APPROVED:

Jennifer Sparacino
City Manager
Executive Director for Redevelopment Agency

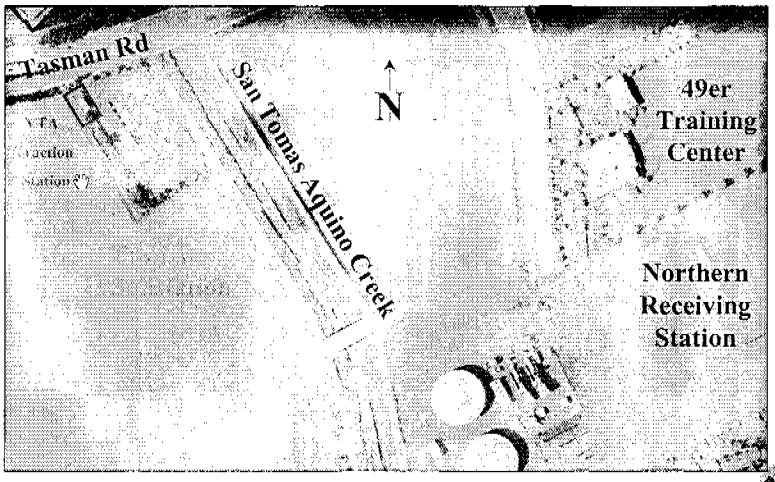
Tasman Substation Relocation

Junona Jonas
Director of Electric Utility
Silicon Valley Power
May 29, 2007



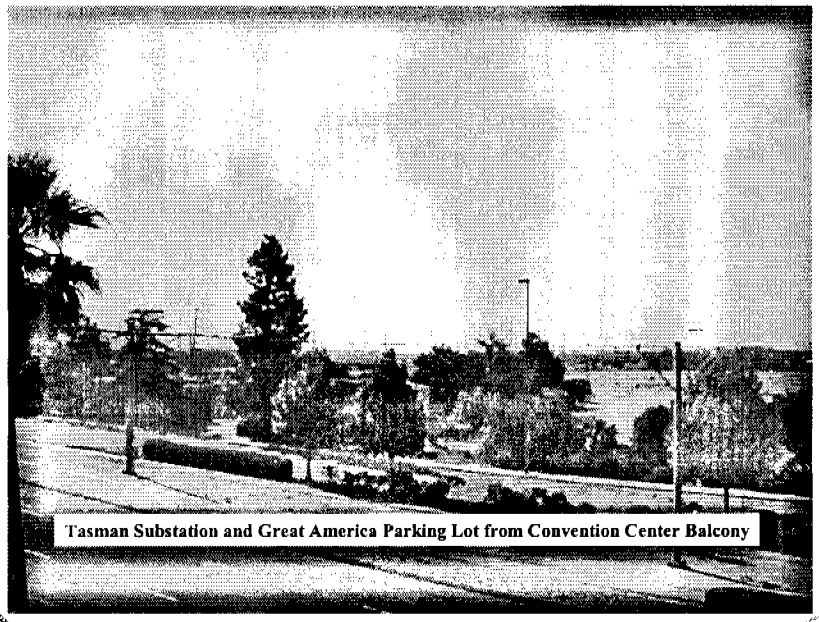


TASMAN SUBSTATION RELOCATION ALTERNATIVE



Existing Tasman Substation

- 2.1 Acre site
- Tasman Drive and San Tomas Aquino Creek
- 3 Transformer Banks
  - Phase 1 Constructed in 1976
  - Phase 2 in 1981
  - Phase 3 in 1986
- Serves 10 to 15% of City load
  - Convention Center
  - Great America
  - Marvell Semiconductor
  - Nortel Networks
- Loaded to 90% of Capacity
- Area development will increase loading to 100% by 2008



Tasman Substation and Great America Parking Lot from Convention Center Balcony

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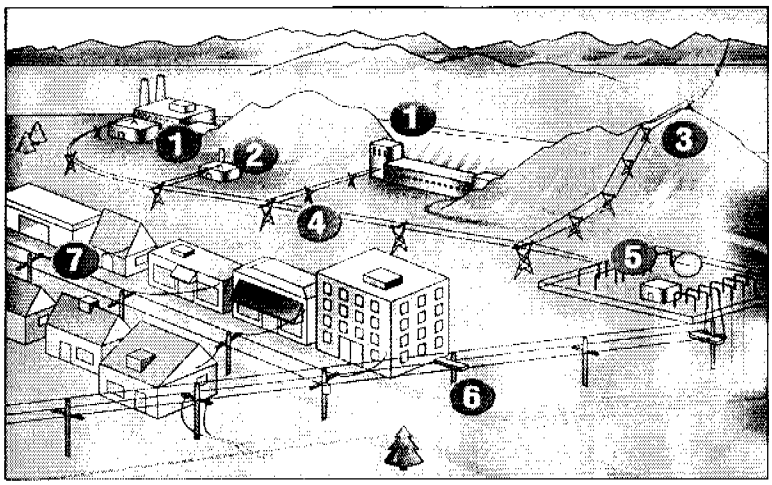
What is a Substation?



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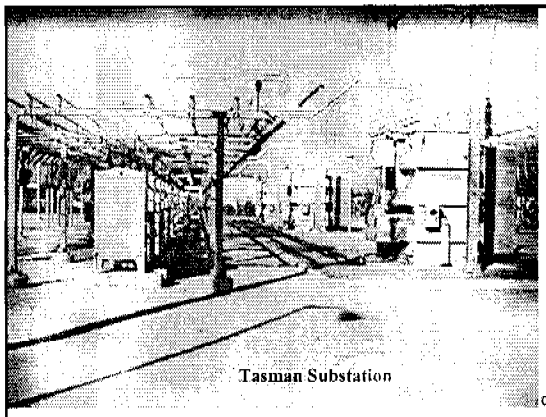
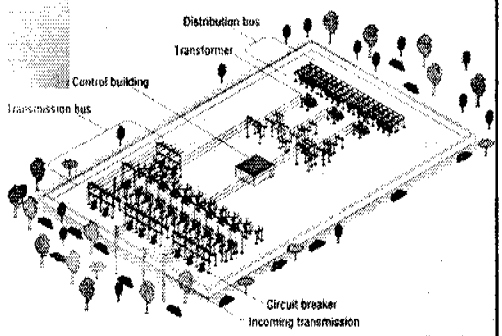


Tasman Substation



Alternatives Considered

- Leave Tasman Substation in current location
  - Pros
    - Least expensive alternative
    - Least impact on customers
    - Consistent with long range plans
  - Cons
    - Attractive nuisance
    - Hard to screen from stadium
- Reconfiguration to smaller footprint on existing site
  - Pros
    - Reduces use of land
  - Cons
    - Cost to rebuild substation
    - Some distribution system costs
    - Attractive nuisance
    - Hard to screen from stadium
    - **Cannot maintain reliable service to customers**

Alternatives Considered

- New location on Great America Parking lot
  - Pros
    - Moves substation away from stadium
    - Maintains reliable service to customers
  - Cons
    - Cost to rebuild substation
    - Higher distribution system costs
    - Issues with 60 kV Transmission
    - Takes away parking spaces or other economic use of land
- Relocate to Northern Receiving Station site
  - Pros
    - City owns land
    - Can coordinate with Palm and Mission Substations
    - Expansion of existing facility
    - Maintains reliable service to customers
  - Cons
    - Cost to rebuild substation
    - Highest distribution system costs
    - NRS land not available for other utility purposes (new capacity)

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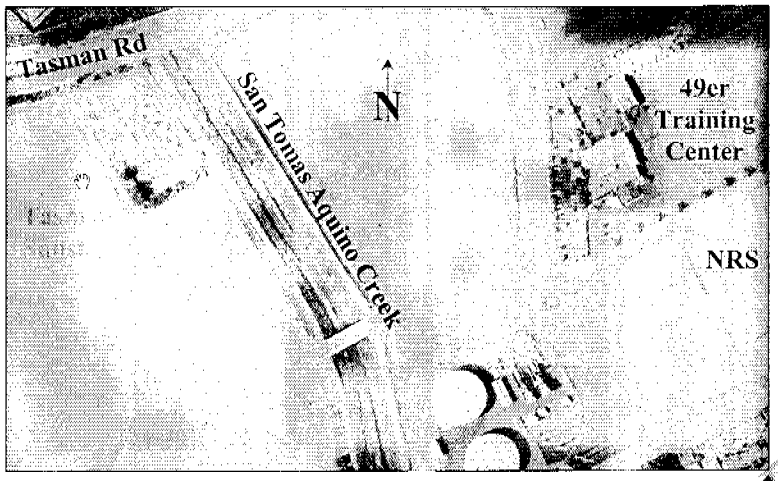
TASMAN SUBSTATION RELOCATION ALTERATIVE



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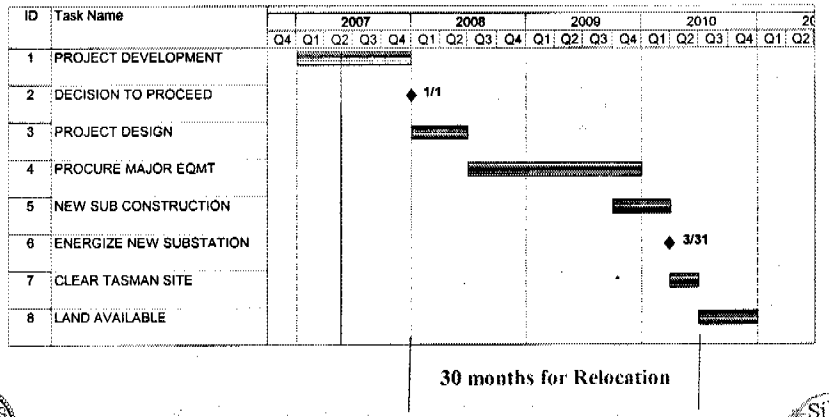
Relocation Alternative

- Construct Tasman Substation Replacement
  - Substructures, major equipment, controls and protection, etc.
  - Design, procure long lead time equipment, construction
- Modify distribution system to connect to new substation
  - 15 underground feeders
  - Two bores under San Tomas Aquino Creek
- Modify 60 kV transmission to connect to new substation
- Transfer load to new substation
- Demolish existing Tasman Substation

Tasman Sub Relocation Alternative



Tasman Substation Relocation

• Construct New Substation	$11.5M
• 12kV Distribution Modifications	$ 5.0M
• 60kV Transmission Modifications	$ 0.3M
• Salvage Tasman Equipment	($ 1.0M)
• Demolish Tasman Substation	$ 1.7M
• Acquisition of Replacement Land	$ 2.5M
Total Costs	$20.0M

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Other Factors

- Five Year Plan for substation upgrades and rebuilds
  - Other substations have higher priority
  - Does not contemplate moving or replacing entire substations
  - Major rebuilds at Tasman probably not scheduled for 10+ years
- Value engineering and coordination w/other Projects
  - Could reduce costs by 10 to 15%.
- Business climate for procurement and contracting
  - Could increase project costs by 10 to 20%
- Value for replacement of old substation with new

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Thank you,

Questions?